



EV-VIT

NEWSLETTER OF THE

ELECTRIC VEHICLES INCUBATION TESTING AND RESEARCH CENTRE
EVIT-RC

CHENNAI

Volume 2, Issue 2 January-June 2025



What's inside

- Deputy Director's Message
- About the Centre
- Vision Statement
- Faculty Corner



The winter semester of the Academic Year 2024-2025 has been quite an exciting one. Our centre has received some of the latest research and testing equipment funded by VIT Chennai. With the strength and confidence given by this equipment, we were able to propose research projects worth 20 crore rupees and carry out consultancy projects worth 9 lacs.

We also had the good fortune of visiting several industries that work in the field of electric vehicles and we have also had several industry experts visit our centre to witness the research facilities.

We are striving to increase the amount of research, consultancy and testing activity in our centre and to this end we have also taken steps to create a positive impact.

This issue of the News Letter portrays some of the events and achievements of our faculty.

Dr. M. Sreekanth

ELECTRIC VEHICLE INCUBATION TESTING AND RESEARCH CENTRE

About the Centre

The Electric Vehicles Incubation Testing and Research Centre at Vellore Institute of Technology Chennai Campus was started in the month of June 2020 with the aim of becoming a Centre of Excellence in the field of Electric Vehicles. The aim of the centre is to carry out cutting edge research in multidisciplinary fields related to electric vehicles as well as file patents, develop products and conduct sponsored research and industrial consultancy. On the other hand, the centre also aims to establish connections with national and international laboratories/universities/institutes for its growth both vertically as well as horizontally.

Initially, the centre was headed by Dr. N.C. Lenin and Dr. M. Sreekanth, Dr. Febin Daya, Dr. M.C. Lenin and Dr. Balamurugan P were the members. Currently it is headed by Dr. M. Sreekanth and Dr. Febin Daya, Dr. P. Ganesan, Dr. Sujoy Sarkar and Dr. Florence Gnana Poovathy are its members. The centre has expertise in the fields of battery chemistry, battery management system and charging.

Physically the centre is located in the 1st floor of the Academic Block 2 at VIT Chennai while the faculty and equipment are placed at various locations in the campus.

Vision Statement

To become the go to place for solutions, innovations, product & technology development and fabrication of electric vehicles and their components.

FACULTY CORNER

Patents

S. No	Faculty	Title	Patent Number	Date of Publication
1	Dr. Manavalla Sreekanth	Device for treating exhaust gases from a vehicle and a method to operate the same	12305554	20-5-2025
2	Dr. T. Venugopal	PORTABLE P-V MODULE FOR LIGHTING	202141006778	13-8-2024

Consultancy Projects

S. No	Investigators	Title	Company
1	Dr. Febin	Design and Development of Hand/Finger gestures algorithm for AR/VR using ST sensors	ST Microelectronics Pvt Ltd, Noida
2	Dr. Febin	Energy Harvesting Tiles: Sustainable Power Generation from Footsteps	Holm Energy Pvt Ltd
3	Dr. Florence	Screen Media Wear Inspection	FLSmith
4	Dr. M. Sreekanth	Develop a tool based on first principles and data driven approach \for Online Estimation of Coal Moisture and Gross Calorific Value in Pulverized Mill	Kalkitech Communications, Bengaluru
5	Dr. M. Sreekanth	GUI based Software development for Modelling Rankine Thermal Power Cycle	Bodh Solutions Pvt Ltd
6	Dr. M.Sreekanth, Venugopal, Sujoy, Florence, Ganesan	Validation of Cycle-Tempo's SOEC Component with bench mark results	Asimptote, BV, The Netherlands

FACULTY CORNER

Publications

S. No	Title
1	Venugopal T. Experimental investigation on accelerated generation of HHO gas using titanium electrodes with platinum and mixed metal oxide coating-A comparative study. International Journal of Hydrogen Energy. 2024 Aug 19;79:177-85.
2	Varikkottil S, Lionel FD, Srinivasan MK, Perumal T, Stonier AA, Peter G, Pagidi B, Ganji V. Inner Resonance and Outer Current Based Control Strategy for Inductive Power Transfer System Used in Wireless Charging for Electric Vehicles. IET Electrical Systems in Transportation. 2024;2024(1):6668174.
3	Nainika C, Balamurugan P, Daya JF. Real driving cycle based SoC and battery temperature prediction for electric vehicle using AI models. Journal of Applied Research and Technology. 2024;22(3):351-61.
4	Sarkar S. Two-dimensional PdPS: A multifunctional electrocatalyst towards HER, ORR, and supercapacitor applications. Catalysis Today. 2025 Feb 1;445:115073.
5	Graceline Jasmine S, Doshi S, Alex AK, Yadukrishnan U, JL FD. A Game-Based Approach to Teach Basic Python Programming. Journal of Engineering Education Transformations. 2024 Oct;38(2).
6	Singh HD, Misra R, Sarkar S, Chakraborty D, Nandi S. Selective electroreduction of CO ₂ to value-added C ₁ and C ₂ products using MOF and COF-based catalysts. Advanced Composites and Hybrid Materials. 2024 Dec;7(6):209.
7	Vethamani AB, Thangavel V. Climatic effects on solar-driven HHO production: An experimental insight. International Journal of Hydrogen Energy. 2025 Apr 15;119:283-93.
8	Manimaran R, Prasshanth CV, Samavedam AS, Khan TY, Almakayeel N, Manavalla S, Feroskhan M. Investigating ternary biogas-hydrogen-diethyl ether blends for emission reduction and performance enhancement in CI engines: A Taguchi approach. Results in Engineering. 2025 Jun 1;26:104870.

FACULTY CORNER

Publications

S. No	Title
9	Bhuin A, Yadav AK, Pandey U, Mukherjee D, Agrahari VK, Ponraj C, Sadhu S, Pal BN, Sarkar S. Fabrication of a solution-processed low voltage TFT by using colloid 2D ZnO nanosheets and its application as a UV photodetector. <i>Journal of Materials Chemistry C</i> . 2025;13(17):8763-75.
10	Tom AM, Daya JL. Design of machine learning-based controllers for speed control of PMSM drive. <i>Scientific Reports</i> . 2025 May 22;15(1):1-24.
11	Harini U, Ponraj C, Sarkar S. Exploring the Battery-like Pseudocapacitive Behavior of Bismuth Ferrite-N doped rGO Composites. <i>Journal of Physics and Chemistry of Solids</i> . 2025 May 31:112905.
12	Agrahari VK, Bhuin A, Yadav A, Sarkar S, Sadhu S, Pandey DS. Efficacy of Methylammonium Iodobismuthate: A Green Catalyst for Reduction of Nitrate to Ammonia. <i>Inorganic Chemistry</i> . 2025 Jul 3.
13	Ghosh M, Nandi S, Sarkar S. Photocatalytic and photoelectrochemical reduction of CO ₂ to value-added chemicals using 2D nanomaterials. <i>Materials Science and Engineering: R: Reports</i> . 2025 Sep 1;166:101029.
14	Venkatesan S, Ganesan P. Cobalt Coordinated Thiourea as Metal Organic Framework for Oxygen Evolution and Reduction Reactions and Its Al-Air Battery Applications. <i>ChemSusChem</i> . 2025 May 26:2500739.
15	Florence Gnana Poovathy J, Ashwin SR, Ramit M, Mohit M, Veeramani V. Testing and analysis of suitable compounds to design an air-tight dome to withstand high pressure for underwater applications. <i>International Journal on Interactive Design and Manufacturing (IJIDeM)</i> . 2024 Nov 25:1-3.
16	Samavedam AS, Prasshanth CV, Sreekanth M, Khan TY, Almakayeel N, Feroskhan M. Exergetic investigation of the influence of injector location in HCCI engines utilizing DEE as pilot fuel and biogas as primary fuel. <i>Heliyon</i> . 2024 Sep 30;10(18).

FACULTY CORNER

Visits & Visitors



Mr. S. Chandramohan, Director & Group President, Finance & Management, TAFE, visited EV centre and EV lab on 21st February 2025.



Visit to Chakra Network Solutions Pvt. Ltd., IIT Madras Research Park, on 5th March 2025.
Met Mr. Sreehari Nagarajan, Managing Director



FACULTY CORNER

Visits & Visitors



Visit by a team comprising Mr. Thiru Srinivasan, Dr. Anand Lakshmanan and Dr. Karupiah, of Centre for Advanced Automotive Research (CAAR), IIT Madras to EV Centre on 12th March 2025. A discussion with chosen VIT Chennai faculty was held later.



A team of BMS experts from Toyota Connected comprising of Mr. Santosh Purushothaman visited the EV centre on 21st March 2025.



FACULTY CORNER

Visits & Visitors



Mr. Prabodh, Founder, Bodh Solutions Pvt. Ltd. Visited the campus to hold discussion related to a consultancy project on 16th April 2025.

A team comprising of Dr. Balki Iyer, Mr. Yash Mahadevan and Mr. Ravindran from Bridge Green Upcycle Pvt. Ltd. visited us to exchange an MoU on 22nd April 2025.



FACULTY CORNER

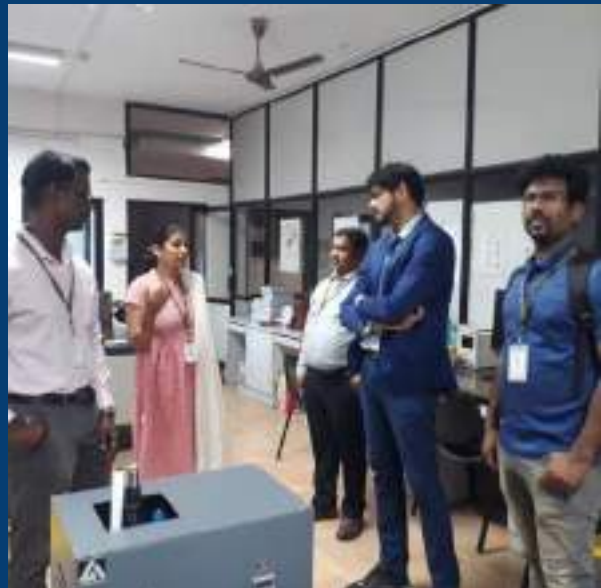
Visits & Visitors



Members of EV centre along with PRO VC VIT Chennai visited Global Automotive Research Centre on 14th May 2025



Dr. Srikanth Rangarajan, Faculty at Binghampton University visited the EV centre on 16th June 2025.



FACULTY CORNER

Faculty Special Achievements



Contents lists available at [ScienceDirect](#)

Materials Science & Engineering R

journal homepage: www.elsevier.com/locate/mser

Photocatalytic and photoelectrochemical reduction of CO₂ to value-added chemicals using 2D nanomaterials

Mandira Ghosh^a, Shyamapada Nandi^{a,b}, Sujoy Sarkar^{a,b,*}

^a Department of Chemistry, School of Advanced Sciences, Vellore Institute of Technology, Chennai Campus, Vandalur-Kelambakkam Road, Chennai, Tamil Nadu 600127, India
^b Electric Vehicle Incubation, Testing and Research Centre (EVI-RC), Vellore Institute of Technology, Chennai Campus, Vandalur-Kelambakkam Road, Chennai, Tamil Nadu 600127, India

IF: 31.6

ARTICLE INFO

Keywords:
2D nanomaterials
Photocatalysis
CO₂ reduction
Value-added chemicals

ABSTRACT

The gradual rise in global temperature due to anthropogenic greenhouse gas (CO₂) emissions leads to severe climate change. Besides carbon capture and storage (CCS), another efficient solution to environmental issues and energy challenges is to convert CO₂ into value-added chemicals. The urgent need for sustainable energy sources and the mitigation of greenhouse gas emissions has driven significant research into novel approaches for CO₂



High Impact Factor Publications by Dr. Sujoy Sarkar



SPRINGER NATURE Link Login

Find a journal | Publish with us | Track your research | Search Cart

Home > Advanced Composites and Hybrid Materials > Article

Selective electroreduction of CO₂ to value-added C1 and C2 products using MOF and COF-based catalysts

Review | Published: 28 October 2024
Volume 7, article number 209, (2024) [Cite this article](#)

IF: 21.8

Advanced Composites and Hybrid Materials

[Aims and scope](#) →
[Submit manuscript](#) →

Himan Dev Singh, Maysakannan G, Rajkumar Mirra, Sujoy Sarkar, Debanjan Chakraborty & Shyamapada Nandi

[Access this article](#)

QUOTE

“It's not that I'm so smart, it's just that I stay with problems longer.”

Albert Einstein

EDITORIAL TEAM:

- ◆ Dr. Sreekanth Manavalla

Contact details:

dydircc.cev@vit.ac.in

Mobile: +91 9677051829

Next issue will be released on 1st January 2024

Instagram:

Twitter: